INTERFERENCE AND NOISE ESTIMATION IN AN OFDM SYSTEM

Abstract of the Disclosure

Noise and interference can be independently measured in a multiple user Orthogonal Frequency Division Multiplexing (OFDM) system. Co-channel interference is measured in a frequency hopping, multiple user, OFDM system by tracking the sub-carriers assigned to all users in a particular service area or cell. The composite noise plus interference can be determined by measuring the amount of received power in a sub-carrier whenever it is not assigned to any user in the cell. A value is stored for each sub-carrier in the system and the value of noise plus interference can be a weighted average of the present value with previously stored values. The noise component can be independently determined in a synchronous system. In the synchronous system, all users in a system may periodically be prohibited from broadcasting over a sub-carrier and the received power in the sub-carrier measured during the period having no broadcasts.